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IDENTIFICATION

PRODUCT CODE: AC-E664G-MC
PRODUCT NAME: CXCPAGO PROCESSOR TST
PRODUCT DATE: SEPTEMBER 1978
MAINTAINER: DEC/X11 SUPPORT GROUP

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1. ABSTRACT:-----

CPA IS A BKMOD THAT EXERCISES THE PROCESSOR IT IS A STRAIGHT
LINE INSTRUCTION TEST THAT TESTS ALL OF THE BASIC PDP 11 INSTRUCTION
SET EXCEPT TRAPS. IT DOES NOT TEST ANY OF THE ADDITIONAL INSTRUCTIONS
AVAILABLE WITH AN 11/40 OR 11/45 PROCESSOR.

2. REQUIREMENTS:-----

HARDWARE: ANY PDP 11 PROCESSOR
STORAGE:: CPA REQUIRES:
1. DECIMAL WORDS: 473
2. OCTAL WORDS: 0731
3. OCTAL BYTES: 1662

3. PASS DEFINITION:-----

ONE PASS OF THE CPA MODULE CONSISTS OF EXECUTING EACH
SUBTEST 3000 TIMES.

4. EXECUTION TIME:-----

CPA RUNNING ALONE ON A PDP 11/05 PROCESSOR TAKES APPROXIMATELY
ONE MINUTE.

5. CONFIGURATION REQUIREMENTS:-----

NONE.

6. DEVICE/OPTION SETUP:-----

NONE.

7. MODULE OPERATION:-----

TEST SEQUENCE: INSTRUCTIONS
BRANCH WORD OPS, MODES 3&5
UNARY BYTE OPS, MODES 3&5
BINARY WORD OPS, MODES 3&5
BINARY BYTE OPS, MODES 3&5
JMP INSTRUCTION
JSR INSTRUCTION

8. OPERATION OPTIONS:-----

NONE.

9. NON-STANDARD PRINTOUTS:-----

NONE

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000000*      BKM00 <CPAG > 0,0,0,0,0,7500,1
000000*      MODULE 40020,CPAG /0,0,0,0,0,7500,1
;          DDXCOM VERSION 6 23-MAY-78
          LIST BIN
000000*      ***** BIN *****
000000*      MODNAM: -ASCII /CPAG / ;MODULE NAME.
000005*      XFLAG: -RYTE OPEN ;MODULE USED TO KEEP TRACK OF WBUFF USAGE
000010*      ADDR: 0+0 ;1ST DEVICE ADDR.
000015*      VECOR: 0+0 ;1ST DEVICE VECTOR.
000020*      BR1: -RYTE PRTV0+0 ;2ND BR LEVEL.
000025*      BR2: -RYTE PRTV0+0 ;3RD BR LEVEL.
000030*      DVID1: 0+1 ;DEVICE INDICATOR 1.
000035*      SR1: OPEN ;SWITCH REGISTER 1
000040*      SR2: OPEN ;SWITCH REGISTER 2
000045*      SR3: OPEN ;SWITCH REGISTER 3
000050*      SR4: OPEN ;SWITCH REGISTER 4
000055*      *****
000026*      040020 STAT: 40020 ;STATUS WORD
000030*      000224 INIT: START ;MODULE START ADDR.
000034*      000000 SPOINT: MODSP ;MODULE STACK POINTER.
000036*      007500 PASCNT: 0 ;PASS COUNTER.
000040*      000000 ICOUNT: 7500 ;# OF ITERATIONS PER PASS=7500
000044*      000000 SOFCNT: 0 ;LOC TO COUNT ITERATIONS
000048*      000000 HRDCNT: 0 ;LOC TO SAVE TOTAL SOFT ERRORS
000052*      000000 SNFPAS: 0 ;LOC TO SAVE TOTAL HARD ERRORS
000056*      000000 HRDPAS: 0 ;LOC TO SAVE SOFT ERRORS PER PASS
000060*      000000 SVSNT: 0 ;LOC TO SAVE HARD ERRORS PER PASS
000064*      000000 RANUM: 0 ;# OF SYS ERRORS ACCUMULATED
000068*      000000 CONFIG: 0 ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED
000072*      000000 RRS1: 0 ;RESERVED FOR MONITOR USE
000076*      000000 RRS2: 0 ;RESERVED FOR MONITOR USE
000080*      000000 SVR0: OPEN ;LOC TO SAVE R0.
000084*      000000 SVR1: OPEN ;LOC TO SAVE R1.
000088*      000000 SVR2: OPEN ;LOC TO SAVE R2.
000092*      000000 SVR3: OPEN ;LOC TO SAVE R3.
000096*      000000 SVR4: OPEN ;LOC TO SAVE R4.
001000*      000000 SVR6: OPEN ;LOC TO SAVE R6.
001004*      000000 CSRA: OPEN ;ADDR OF CURRFNT CSR.
001008*      000000 ACSB: OPEN ;ADDR OF GOOD DATA, OP
001012*      000000 HASADR: 0 ;ADDR OF BAD DATA, OR
001016*      000000 ASTAT: OPEN ;STATUS REG CONTENTS.
001020*      000000 CRTVTP: 0 ;TYPE OF ERROR
001024*      000000 ASB: OPEN ;EXPECTED DATA.
001028*      000000 AWAS: OPEN ;ACTUAL DATA.
001032*      000000 RSTRT: RSTRT ;RESTART ADDRFS AFTER END OF PASS
001036*      000000 WDRS: OPEN ;WORDS FROM MEMORY PER ITERATION
001040*      000000 INTR: OPEN ;# OF INTERRUPTS PER ITERATION
001044*      000001 IDNUM: 1 ;MODULE IDENTIFICATION NUMBER=1

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000040      .REPT SPSIZ ;MODULE STACK STARTS HERE.
          .NLIST
          .WORD 0
          .LIST
          .ENDR
000224*      MODSP: *****
;CHECK BRANCH INSTRUCTIONS
164 000224* 000257 RESTART: CCC CC0
165 000224* 103407 BCS CC0
166 000226* 102406 BVS CC0
167 000230* 001407 BEQ CC0
168 000234* 000404 BNE CC0
169 000236* 002403 BLT CC0
170 000240* 003402 BLE CC0
171 000242* 101401 BLUS CC0
172 000244* 101003 BHI CON1
173 000246*
174
175
176
177 000246* 104405 000000* 000000
178 ;*****
179 ;HDRERS,BEGIN,NULL
180 ;*****
181
182 000254* 000262 ;CONTINUE
183 000256* 000270 CON1: SEV ;CC*S=1010
184 000260* 102003 SEN
185 000262* 002402 BVC CC2
186 000264* 003401 BLT CC2
187 000266* 002003 BLE CC2
188 000270* BGE CON3
189
190 000270* 104405 000000* 000000
191 ;*****
192 ;HDRERS,BEGIN,NULL
193 ;*****
194
195 000276* 000264 ;CONTINUE
196 000300* 000261 CON3: SEZ ;CC*S=1111
197 000304* 001003 SFC
198 000306* 003002 BNE CC4
199 000308* 101001 BGT CC4
200 000310* 003403 BHI CC4
201 000312* BLE YT15
202
203 000312* 104405 000000* 000000
204 ;*****
205 ;HDRERS,BEGIN,NULL
206 ;*****
207
208
209
210 000320* 000402 ;CHECK UNARY WORD OPS USING ADDRESS MODES 3 AND 5
211 000322* 000000 YT15: BR 15
212 000324* 000000 .WORD 0

```

```
213 000326 010703  
214 000330 152703 000004 15: MOV PC,R3  
215 000334 005013 ASB @R3  
216 000336 010300 CLR (R3)  
217 000340 015743 MOV R3,R0  
218 000342 010143 TST R3  
219 000344 010304 MOV R0,(R3)  
220 000346 000257 MOV R3,R4  
221 000350 005733 CCC  
222 000352 001403 TST @R3+ ;(R0)=000000,CC=0100  
223 BPC 25  
224 000354 104405 000000 000000 ;*****  
225 HRDERS,REGIN,NULL ;  
226 ;*****  
227 000362 000261 25: SFC  
228 000364 006053 ROR @-(R3) ;(R0)=100000,CC=1010  
229 000366 103402 BCS ROR5  
230 000370 103001 BVC ROR5  
231 000372 100403 BMI R0  
232 000374 104405 000000 000000 ROR5: ;*****  
233 HRDERS,REGIN,NULL ;  
234 ;*****  
235 000402 000257 RD: CCC  
236 000404 006234 ASB @R4+ ;(R0)=140000,CC=1010  
237 000406 102001 BVC @SR3  
238 000410 100403 BMI RDI  
239 000412 104405 000000 000000 ASR3: ;*****  
240 HRDERS,REGIN,NULL ;  
241 ;*****  
242 000420 000250 RD1: CLN  
243 000422 006333 ASL @R3+ ;(R0)=100000,CC=1001  
244 000424 103002 BCC ASL3  
245 000426 102403 BVS ASL3  
246 000430 100403 BMI RD2  
247 000432 104405 000000 000000 ASL3: ;*****  
248 HRDERS,REGIN,NULL ;  
249 ;*****  
250 000440 000277 RD2: SCC  
251 000442 005354 DFC @-(R4) ;(R0)=077777, CC=0010  
252 000444 103001 BVC DFC5  
253 000446 102002 BVC DEC5  
254 000448 001401 BPC DEC5  
255 000450 100003 BPL R3  
256 000452 104405 000000 000000 DEC5: ;*****  
257 HRDERS,REGIN,NULL ;  
258 ;*****  
259 000462 005453 RD3: NEG @-(R3) ;(R0)=100001, CC=1001  
260 000464 103002 BCC NEG5
```

```
269 000466 102401  
270 000470 100403  
271 000472 104405 000000 000000 NEG5: ;*****  
272 HRDERS,REGIN,NULL ;  
273 ;*****  
274 000500 000262 RD4: SEV  
275 000502 005134 COM @R4+ ;(R0)=077776, CC=0001  
276 000504 103001 BCC COM3  
277 000506 102003 BVC COM5  
278 000510 104405 000000 000000 COM3: ;*****  
279 HRDERS,REGIN,NULL ;  
280 ;*****  
281 000516 005233 RD5: INC @R3+ ;(R0)=077777, CC=0001  
282 000520 103001 BCC INC3  
283 000522 100003 BPL RD6  
284 000524 104405 000000 000000 INC3: ;*****  
285 HRDERS,REGIN,NULL ;  
286 ;*****  
287 000532 005554 RD6: ADC @-(R4) ;(R0)=100000, CC=1010  
288 000534 103402 BCS ADC5  
289 000536 102001 BVC ADC5  
290 000540 100403 BMI RD7  
291 000542 104405 000000 000000 ADC5: ;*****  
292 HRDERS,REGIN,NULL ;  
293 ;*****  
294 000550 000257 RD7: CCC  
295 000552 006134 ROL @R4+ ;(R0)=000000,CC=0111  
296 000554 103002 BCC ROL3  
297 000556 102001 BVC ROL3  
298 000560 001403 BEQ RD8  
299 000562 104405 000000 000000 RD3: ;*****  
300 HRDERS,REGIN,NULL ;  
301 ;*****  
302 000570 005253 RD8: INC @-(R3) ;(R0)=000001, CC=0001  
303 000572 005654 SRC @-(R4) ;(R0)=000000, CC=0100  
304 000574 103401 BCS SRC5  
305 000576 001403 BEQ RD9  
306 000580 104405 000000 000000 SRC5: ;*****  
307 HRDERS,REGIN,NULL ;  
308 ;*****  
309 000600 104405 000000 000000 ;CHECK UNARY BYTE OPS USING ADDRESS MODES 3 AND 5  
310 RD9: BR 15 ;RESERVE 3 WORDS  
311 ;WORD 0 ;1 FOR EVEN BYTE ADDRESS  
312 ;WORD 0 ;1 FOR ODD BYTE ADDRESS  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324
```

```
325 000614 000000  
326 000616 010702  
327 000620 005742  
328 000622 005742  
329 000624 010200  
330 000626 005010  
331 000630 005742  
332 000632 005742  
333 000634 010022  
334 000636 005200  
335 000640 010022  
336 000642 010200  
337 000644 010205  
338  
339 000646 105152  
340 000650 103001  
341 000652 100403  
342 000654  
343  
344 000654 104405 000000 000000  
345  
346  
347 000662 105752  
348 000664 001403  
349  
350 000666 104405 000000 000000  
351  
352 000674 000262  
353 000676 106255  
354 000700 103002  
355 000702 102401  
356 000704 100403  
357 000706  
358 000706  
359 000706 104405 000000 000000  
360  
361  
362  
363 000714 105232  
364 000716 103001  
365 000720 100003  
366 000722  
367  
368 000722 104405 000000 000000  
369  
370  
371 000730 000241  
372 000734 106055  
373 000736 103003  
374 000736 102002  
375 000740 001001  
376 000742 100003  
377 000744  
378 000744 104405 000000 000000  
379  
380
```

```
IS:  WORD 0 ;AND 1 FOR DATA  
      MOV PC,R2 ;BACK R2 UP TO  
      IST -(R2) ;DATA WORD  
      CLR R2,R0 ;RO POINTS TO THE DATA WORD  
      MOV R2,R0 ;PRESET DATA  
      CLR R2,R0 ;BACK R2 UP TO  
      IST -(R2) ;BACK R2 UP TO  
      MOV R0,(R2)+ ;EVEN BYTE ADDRESS WORD  
      INC R0 ;LOAD ADDRESS  
      MOV R0,(R2)+ ;ODD BYTE ADDRESS  
      MOV R2,R0 ;LOAD ODD BYTE ADDRESS  
      MOV R2,R5 ;RESET RO  
      COMR @-(R2) ;(R0)=177400,CC=1001  
      BCC COMR5  
      BMI TE  
CONR5: ;*****  
      HRDERS,REGIN,NULL ;*****  
TR:  TSTR @-(R2) ;(R0)=177400, CC=0100  
      BEQ IS ;*****  
      HRDERS,REGIN,NULL ;*****  
IS:  SPV  
      ASRR @-(R5) ;(R0)=177400, CC=1001  
      BCC ASRR5  
      BVS ASRR5  
      BMI TE1  
ASRR5: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE1: INCR @-(R2)+ ;(R0)=177401, CC=000  
      BCC INCR3  
      BPL TE2  
INCR3: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE2: CLC  
      RORR @-(R5) ;(R0)=177400, CC=0111  
      BCC RORR5  
      BVC RORR5  
      BNE RORR5  
      BPL TE3  
RORR5: ;*****  
      HRDERS,REGIN,NULL ;*****
```

```
381  
382 000752 106332  
383 000754 103002  
384 000756 103401  
385 000760 100403  
386 000762  
387  
388 000762 104405 000000 000000  
389  
390  
391 000770 105552  
392 000772 103401  
393 000774 100403  
394 000776  
395 000776 104405 000000 000000  
396  
397  
398  
399 001004 000777  
400 001006 106135  
401 001010 101402  
402 001012 102401  
403 001014 100003  
404 001016  
405  
406 001016 104405 000000 000000  
407  
408  
409 001024 000352  
410 001026 100403  
411  
412 001030 104405 000000 000000  
413  
414  
415 001036 000261  
416 001040 105432  
417 001042 103401  
418 001044 001403  
419 001046  
420 001046 104405 000000 000000  
421  
422  
423  
424 001054 105432  
425 001056 105352  
426 001060 103001  
427 001062 001403  
428 001064  
429  
430 001064 104405 000000 000000  
431  
432
```

```
TE3:  ASLR @-(R2)+ ;(R0)=177000, CC=1001  
      BCC ASLR3  
      BVS ASLR3  
      BMI TE4  
ASLR3: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE4:  ADCR @-(R2) ;(R0)=177400, CC=1000  
      BCC ADCR5  
      BMI TE5  
ADCR5: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE5:  SCC  
      ROLR @-(R5)+ ;(R0)=177401, CC=0000  
      BLOS ROLR3 ;BRANCH IF C OR Z IS SET  
      BVS ROLR3  
      BPL TE6  
ROLR3: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE6:  SWAR @-(R2) ;(R0)=000777, CC=1000  
      BMI IS  
IS:  SPC  
      SPCR @-(R5)+ ;(R0)=000377, CC=0100  
      BSC SPCR3  
      BEQ TE7  
SPCR3: ;*****  
      HRDERS,REGIN,NULL ;*****  
TE7:  NEGR @-(R2)+ ;(R0)=000001  
      BCC DPCR5 ;(R0)=000000, CC=0101  
      BEQ B1  
DECR5: ;*****  
      HRDERS,REGIN,NULL ;*****
```

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433
434
435
437 001072* 000404 ;CHECK BINARY WORD OPS USING ADDRESS MODES 3 & 5
438 001073* 000000 B1: BR 15 ;RESERVE SPACE FOR DATA AND ADDRESSES
439 001074* 000000 ;CONTAINS ADDRESS OF SOURCE DATA
440 001100* 000000 ;CONTAINS ADDRESS OF DEST DATA
441 001102* 000000 ;CONTAINS SOURCE DATA
442 001104* 010701 ;CONTAINS DEST DATA
443 001106* 010100 1S: MOV PC,R1 ;SET SCOPE PTR
444 001110* 024040 MOV R1,R0 ;ADJUST R0
445 001112* 010005 CMP -(R0),-(R0) ;R5 POINTS TO DEST DATA
446 001114* 024545 MOV R0,R5 ;SUB 4 FROM R5
447 001116* 010015 MOV R0,(R5) ;R5 POINTS TO ADDRESS OF DEST DATA
448 001120* 010502 MOV R5,R2
449 001122* 010004 MOV R0,R4 ;R4 POINTS TO DEST DATA
450 001124* 005740 TST R0,R3
451 001126* 010003 MOV R0,R3 ;R3 POINTS TO SOURCE DATA
452 001130* 010042 MOV R0,-(R2) ;R2 POINTS TO ADDRESS OF SOURCE DATA
453 001132* 005013 CLR (R3) ;PRESET SOURCE DATA
454 001134* 005014 CLR (R4) ;PRESET DEST DATA
455
456 001136* 000277 SCC
457 001140* 000244 CLZ
458 001142* 163235 SUB #1,R4 ;(R3)=000000,(R4)=000000,CC=0100
459 001144* 103402 BCS SUB3
460 001146* 102401 BVS SUB3
461 001150* 001403 BEQ H3
462
463
464 001152* 104405 000000* 000000 SUB3: ;*****
465 ;HDRERS,REGIN,NULL ;
466 ;*****
467 001160* 052752 100000 H3: B1S #100000,0-(R2) ;(R3)=100000
468 001164* 062755 000001 ADD #1,0-(R5) ;(R4)=000001
469 001170* 163235 SUB #0(R2)+,0(R5)+ ;(R3)=100000,(R4)=100001,CC=1011
470 001172* 103002 BCC SUB3A
471 001174* 102001 BVC SUB3A
472 001176* 100403 BMI H4
473 001200*
474 001200* 104405 000000* 000000 SUB3A: ;*****
475 ;HDRERS,REGIN,NULL ;
476 ;*****
477 001206* 005414 H4: NEG (R4) ;(R4)=077777
478 001210* 035255 BIT 0-(R2),0-(R5) ;(R3)=100000,(R4)=077777
479 001212* 001403 BEQ H3
480
481 001214* 104405 000000* 000000 1S: ;*****
482 ;HDRERS,REGIN,NULL ;
483 ;*****
484 001222* 023235 CMP 0(R2)+,0(R5)+
485 001224* 102403 BVS H3
486
487 001226* 104405 000000* 000000 ;HDRERS,REGIN,NULL ;
488 ;*****

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489 001234* 005152 2S: COM 0-(R2)
490 001236* 000257 CCC
491 001240* 063255 ADD 0(R2)+,0-(R5)
492 001242* 103001 BVC ADD3
493 001244* 100403 BMI H41
494 001246*
495
496 001246* 104405 000000* 000000 ADD3: ;*****
497 ;HDRERS,REGIN,NULL ;
498 ;*****
499 001254* 000261 H41: SEC
500 001256* 045235 BIC 0-(R2),0(R5)+ ;(R3)=077777,(R4)=100000
501 001260* 103001 BCC BIC3
502 001264* BMI H5
503
504 001264* 104405 000000* 000000 BIC3: ;*****
505 ;HDRERS,REGIN,NULL ;
506 ;*****
507 001272* 005155 H5: COM 0-(R5) ;(R4)=077777
508 001274* 010403 CMP 0(R2)+,0(R5)+ ;(R3)=077777,(R4)=077777
509 001276* 001403 BEQ H6
510
511 001300* 104405 000000* 000000 ;HDRERS,REGIN,NULL ;
512 ;*****
513
514 ;CHECK BINARY BYTE OPS USING ADDRESS MODES 3 & 5.
515 001306* 000406 H6: BR 15 ;RESERVE SPACE FOR ADDRESSES & DATA
516 001310* 000000 ;CONTAINS ADDRESS OF SOURCE DATA (EVEN BYTE)
517 001312* 000000 ;CONTAINS ADDRESS OF SOURCE DATA (ODD BYTE)
518 001314* 000000 ;CONTAINS ADDRESS OF DEST DATA (EVEN BYTE)
519 001316* 000000 ;CONTAINS ADDRESS OF DEST DATA (ODD BYTE)
520 001320* 000000 ;CONTAINS SOURCE DATA
521 001322* 000000 ;CONTAINS DEST DATA
522
523 001324* 010700 1S: MOV PC,R0
524 001326* 024040 CMP -(R0),-(R0) ;R0=ADDRESS OF DEST DATA
525 001330* 010003 MOV R0,R3 ;R3 "
526 001332* 010305 MOV R1,R5 ;R5 "
527 001334* 005743 TST R1,R5 ;SUB 2 FROM R3
528 001336* 010043 MOV R0,-(R3) ;R3 POINTS TO ADDRESS OF DEST DATA
529 001340* 005213 INC (R3) ;ODD BYTE
530 001342* 010043 MOV R0,-(R3) ;EVEN BYTE
531 001344* 010304 TST R3,R4 ;R0=ADDRESS OF SOURCE DATA
532 001346* 005740 MOV R0,-(R4) ;R4 POINTS TO ADDRESS OF SOURCE DATA
533 001350* 010044 INC (R4) ;ODD BYTE
534 001352* 005214 MOV R0,-(R4) ;EVEN BYTE
535 001354* 010044
536
537 001356* 000261 SEC ;SET CARRY
538 001360* 012734 177001 MOV #177001,0(R4)+ ;SOURCE DATA=100001
539 001364* 112734 000200 MOVB #20,0(R4)+
540 001370* 112433 MOVB 0(R4),0(R3)+ ;DEST DATA=000600
541 001372* 112433 MOVB 0-(R4),0(R3)+
542 001374* 103403 BCS 2S
543
544 001376* 104405 000000* 000000 ;*****
545 ;HDRERS,REGIN,NULL ;

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545 ;*****
546 001404* 022715 000600 2S: CMP #600,(R5) ;CHECK DEST DATA
547 001410* 001403
548 BFG #5
549 ;*****
550 001412* 104405 000000* 000000 HDRS,REGIN,NULL ;*****
551 001420* 024343 3S: CMP -(R3),-(R3) ;POINT R4 BACK TO EVEN RYTE
552 001422* 153433 BISR R(R4)+,R(R3)+
553 001424* 153433 BISR R(R4)+,R(R3)+ ;DEST DATA=100601
554 001426* 022715 100601 CMP #100601,(R5) ;CHECK RESULT
555 001432* 001403 BFG #5
556 ;*****
557 001434* 104405 000000* 000000 HDRS,REGIN,NULL ;*****
558 ;*****
559 001442* 145453 4S: BICR R-(R4),R-(R3)
560 001444* 145453 BICR R-(R4),R-(R3)
561 001446* 133433 BITR R(R4)+,R(R3)+
562 001450* 001002 BNE BITR3
563 001452* 135433 BITR R-(R4),R(R3)+
564 001454* 001003 BNE H7
565 BITR3: ;*****
566 001456* 104405 000000* 000000 HDRS,REGIN,NULL ;*****
567 ;*****
568 ;*****
569 001464* 123453 H7: CMPR R(R4)+,R-(R3)
570 001466* 001002 BNE CMPR3
571 001470* 123453 CMPR R(R4)+,R-(R3)
572 001472* 001403 BFG JPI
573 001474* 104405 000000* 000000 CMPR3: ;*****
574 HDRS,REGIN,NULL ;*****
575 ;*****
576 001474* 104405 000000* 000000 HDRS,REGIN,NULL ;*****
577 ;*****
578 ;*****
579 ;*****
580 ;*****
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585
586 ;CHECK JMP INSTRUCTIONS
587 001502 010700 000012 JPI:  MOV PC,R0
588 001504 062797 ;SET ADDRESS FOR JMP INST
589 001510 000000 ;SET CC'S
590 001512 000110 JPI:  JMP (R0)
591 001514 000402 2S:   BP 3S
592 001516 000253 ;JMP INST JUMPS HERE
593 001520 000775 JPI:  BR 2S
594
595 001522 103003 3S:   BCC JMP1
596 001524 102002 ;JMP1
597 001526 001001 ;JMP1
598 001530 100003 ;JMP1
599 001532 000000 ;JMP1
600
601 001532 104405 000000 000000 JMP1: ;*****
602 ;HDRERS,REGIN,NULL ;
603 ;*****
604
605 001540 005002 K2:   CLR R2 ;SET INDICATOR
606 001542 010704 ;SET IP JMP REGISTER
607 001544 010400 ;SET UP CHECK REGISTER
608 001546 000402 BR 1S ;SET UP CHECK REGISTER
609 001550 005102 BR 1S ;COMPLEMENT INDICATOR
610 001552 000403 BR 1S ;COMPLEMENT INDICATOR
611 001554 022424 1S:   CMP (R4)+,(R4)+
612 001556 000403 TST (R4)+
613 001560 000144 JMP (R4)+ ;R4=JMP ADDRESS
614 001562 005202 2S:   INC R2 ;JMP R4 AS ADDRESS
615 001564 001003 BNE R2 ;CHECK INDICATOR
616 001566 020200 CMP R0,R4
617 001570 020004 CMP (R0)+,(R0)+ ;CHECK AUTO-DEC R4
618 001572 001403 BEQ JSRTST
619 001574 104405 000000 000000 JMP4: ;*****
620 ;HDRERS,REGIN,NULL ;
621 ;*****
622
623
624 ;CHECK JSR INSTRUCTIONS
625 JSRTST: MOV #3S,R2 ;FORM DPST ADRS
626 ;SET CC'S
627 001606 000277 SCC ;PRESET CC'S
628 001610 000242 CLV
629 001612 004512 JSR R2,(R2) ;GO TO 3S VIA R2
630 001614 005702 JSR R2,(R2) ;CHECK INDICATOR
631 001616 001012 BNE JSR1 ;R2 SHOULD=0
632 001620 000414 BR EX
633 001622 000205 BR EX ;RETURN FROM SUBROUTINE
634 001624 103007 RTS R5 ;CHECK THAT JSR DID NOT
635 001626 102406 BCC JSR1 ;AFFECT CC'S
636 001630 001005 BNE JSR1
637 001632 100004 BPL JSR1
638 001634 005002 CLR R2 ;CLEAR INDICATOR

```

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639 001636 012704 001614' JSR1:  MOV #1S,R4 ;GET RETURN ADDRESS
640 001642 000767 BR 2S
641 001644 104405 000000 000000 JSR1:  ;*****
642 ;HDRERS,REGIN,NULL ;
643 ;*****
644
645 001652 104413 000000' EX:   ENDITS,REGIN ;SIGNAL END OF ITERATION.
646 001652 104413 000000' ST:   JMP RESTRT ;MONITOR SHALL TEST END OF PASS
647
648
649
650
651 .END

```


PRTY5 =	000240	164#		
PRTY6 =	000300	124#		
PRTY7 =	000340	164#		
PS	= 177776	164#		
PSW	= 177776	164#		
PUSH	= 005746	164#		
PUSH2 =	024646	164#		
RANDS	= 104417	164#		
RANNUM	= 000054R	133#		
RD	= 000402R	231#	237#	
RD1	= 000420R	240#	246#	
RD2	= 000440R	250#	256#	
RD3	= 000462R	261#	267#	
RD4	= 000500R	270#	276#	
RD5	= 000516R	279#	285#	
RD6	= 000532R	287#	293#	
RD7	= 000550R	296#	302#	
RD8	= 000570R	305#	311#	
RD9	= 000600R	313#	319#	
RFSRT	= 000224R	152#	166#	649
RES1	= 000056R	135#		
RES2	= 000060R	136#		
ROL3	= 001016R	401#	402#	404#
ROL3	= 000562R	304#	305#	307#
RORR5	= 000744R	373#	374#	375#
RORR5	= 000112R	252#	232#	377#
RSTRT	= 000112R	145#		
SADDR	= 000102R	145#		
SACH3	= 001046R	417#	419#	
SACS	= 000600R	372#	316#	
SOPCNT	= 000042R	124#		
SOPCNT	= 104408	164#		
SOPPAS	= 000046R	130#		
SPLIT	= 000032R	124#	157	
SPLIT	= 000016R	117#		
SR1	= 000020R	118#		
SR2	= 000024R	119#		
SR3	= 000028R	120#		
SR4	= 001656R	649#		
ST	= 000224R	123#	165#	
STAT	= 000026R	122#		
SUB3	= 001152R	452#	460#	452#
SUB3A	= 001700R	470#	471#	473#
SVR0	= 000062R	137#		
SVR1	= 000064R	138#		
SVR2	= 000066R	139#		
SVR3	= 000070R	140#		
SVR4	= 000072R	141#		
SVR5	= 000074R	142#		
SVR6	= 000076R	143#		
SYSCNT	= 000052R	132#		
TE	= 000662R	341#	347#	
TE1	= 000714R	357#	363#	
TE2	= 000730R	365#	371#	
TE3	= 000752R	376#	382#	

TE4	= 000770R	385#	391#	
TE5	= 001004R	393#	399#	
TE6	= 001024R	403#	409#	
TE7	= 001054R	418#	424#	
TRPOFD	= 000022	164#		
VECTOR	= 000010R	113#		
WASADP	= 000104R	147#		
WDR	= 000116R	154#		
WDT0	= 000114R	153#		
XFLAG	= 000005R	111#		
YTL5	= 000320R	200#	210#	

. ABS. 000000 000
 001662 001

ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0
 XCPAGO,XCPAGO/SUL/CRF:SYM=DDXCOM,XCPAGO
 RUN-TIME: 1 2.3 SECONDS
 RUN-TIME RATIO: 12/4=3.0
 CORE USED: 7K (13 PAGES)